



## Ecology At Work On Cathode Ray Tubes

### Cause for Concern

Computers are being purchased and replaced at record rates, which means that more computers are also being discarded. Similarly, it is expected that older televisions will be discarded at higher than average rates due to the coming shift to high-definition broadcasting, making analog equipment obsolete by 2006. There is a growing concern about lead and other toxic metals in computers and the cathode ray tubes (CRTs) of monitors and television sets. Color computer monitors, for example, typically contain between 4 and 8 pounds of lead in their CRTs. Lead protects viewers from harmful x-rays.

Computer monitors and televisions may be crushed when they are

disposed in solid waste landfills, and lead can leach out of the equipment. That lead, along with other metals, can potentially reach groundwater and the environment. The harmful effects of lead, especially to children, are well known.

Other toxic metals that computers often contain include chromium, cadmium, and mercury. Recent test data show that monochrome ("black and white") monitors don't designate as dangerous waste for lead content but color monitors do. Color CRTs must be managed according to the requirements of the *Dangerous Waste Regulations*.

### Computer-Waste Management

Ecology is evaluating the possibility of managing CRTs as "universal waste." Universal wastes are certain frequently generated dangerous wastes that can be managed appropriately under reduced regulatory requirements. Universal waste requirements give generators some relief from full regulation, but still require that wastes be properly managed and sent to a "destination facility" — typically a treatment, storage, disposal, or recycling facility.

In the longer term, the top environmental priority is to find ways to keep CRTs out of the solid waste stream. Ecology is involved in a national effort to work with manufacturers on extended producer responsibility. A key element in this approach is product "take back" in which manufacturers assume responsibility for management of computers and other electronic devices at the end of their useful service. This has

the dual advantage of making it easier for consumers to dispose of these devices in an environmentally responsible manner and it creates incentives for manufacturers to design products to extend their useful life, minimize pollution and maximize the potential for reuse and reclamation. The "Guide to Environmentally Friendly Computer Purchasing" at <http://www.govlink.org/nwpsc/> offers some options to consider when purchasing a new computer.

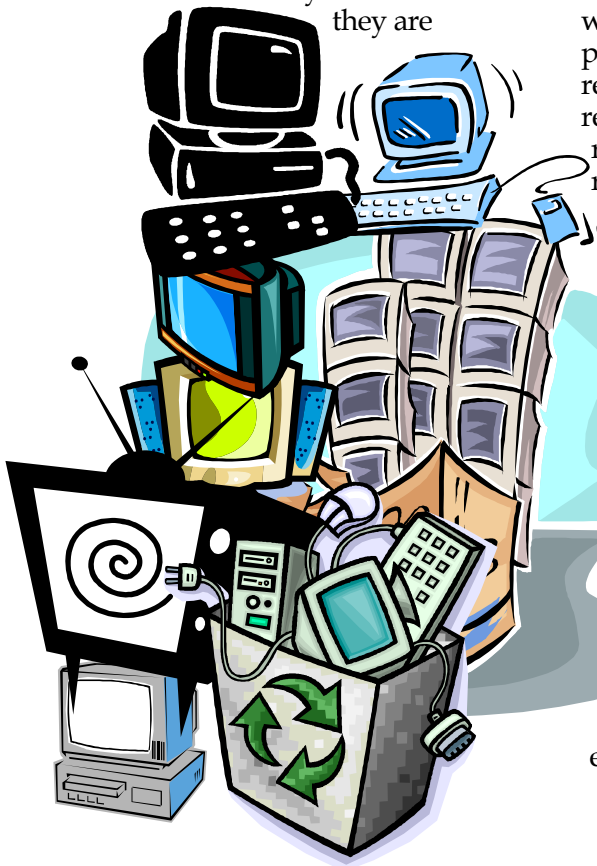
If you need to get rid of a computer monitor or television, seek options other than disposal whenever possible.

■ Check with your local county waste management program. Some counties are developing programs to help recycle computers and monitors. For example, glass from old CRTs can be melted, and then used to make new CRT screens.

■ See if you can donate your computer to be reused.

■ Check with the company that you bought your computer from to see if they have a take-back program. Most companies that do have websites that describe their programs.

Ecology is in the early stages of developing more options for CRT management. For more information about CRTs, contact Tom Cusack at [tcus461@ecy.wa.gov](mailto:tcus461@ecy.wa.gov) or (360) 407-6755 or Chipper Hervieux at [pher461@ecy.wa.gov](mailto:pher461@ecy.wa.gov) or (360) 407-6756.



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## Ecology and the Navy: An Award Winning Partnership

Ecology and Navy facilities within Puget Sound forged a unique partnership that succeeded in reducing pollution and increasing defense readiness. In the process, the Navy reduced costs by \$43 million over the past ten years. This partnership earned former Vice President Al Gore's Hammer Award, administered by the National Partnership for Reinventing Government, which recognizes federal and local government agencies for initiatives that work better and cost less. A \$400 hammer once symbolized inefficiency in government; now the Hammer Award represents getting results Americans care about. Since 1994, more than 1,200 Hammer Awards have been presented to teams comprised of federal employees, state and local employees, and citizens working to build a better government.

This Hammer Award recognizes Ecology and the Navy for joining forces to reduce dangerous waste generation at Navy facilities and prevent oil spills in Washington waters. Their efforts succeeded in reducing dangerous waste generation by 20,000 tons at the three largest Navy facilities since 1990.

The Navy also accomplished a 98% reduction in oil spills, by volume, in Washington waters since 1998.

Among the benefits achieved through this innovative alliance are:

- ✓ Improved environmental quality
- ✓ Long and short term liability cost avoidance
- ✓ Improved worker health and safety risk in our communities
- ✓ Reduced impacts on limited Navy and State resources
- ✓ Improved communications between Ecology and Navy personnel.

Reducing the high costs of cleaning up environmental problems and fulfilling paperwork requirements for regulatory compliance also improved Ecology and the Navy's ability to carry out their respective missions.

Effective communication was key to the success of this partnership, aimed at eliminating or reducing the sources of pollution and improving environmental compliance. Project teams, networks, and manager/staff level partnerships enabled employees to build action plans to achieve their environmental goals. Sharing information regionally helped to eliminate duplication of effort.

Keeping communication channels open ensured that all concerns were addressed up front and that regulatory requirements and mutual expectations were clearly known. The Navy is now committed to implementing an Environmental Management System to provide continuous improvement in pollution prevention and compliance with the regulations.

### Web Picks

#### Tour A Virtual Auto Body Shop

EPA's Design for the Environment (DfE) Program, in cooperation with CCAR-GreenLine, has launched a first-of-a-kind auto body shop information center on the web at <http://www.ccar-greenlink.org/>. The site allows the user to tour a virtual shop and to click on items in the shop to learn about preferred practices. The virtual shop also provides links to the DfE Best Practice Guide, fact sheets on chemicals used in auto refinishing, NIOSH information, and to paint companies who have publicly posted their material safety data sheets and health and safety materials.

#### Environmental Management Systems (EMS)

An EMS implementation guide for small and medium-sized organizations is available for review or downloading from EPA's Office of Wastewater Management at [www.epa.gov/OWM/wm046200.htm](http://www.epa.gov/OWM/wm046200.htm).

#### Pollution Prevention Request for Proposal Clearinghouse

Find money to fund your pollution prevention projects. Numerous funding opportunities are posted on this Northwest Pollution Prevention Resource Center website at [www.pprc.org/pprc/rfp/rfp.html](http://www.pprc.org/pprc/rfp/rfp.html).

*Navy Rear Admiral Vinson E. Smith, Commander Navy Region Northwest (left) and Ecology Director Tom Fitzsimmons (right) receive their Hammer Awards from Partnership Press Officer Susan Blumenthal (center).*





## SEH America Wins Governor's Pollution Prevention Award

SEH America earned the prestigious Governor's Award for Achievement in Pollution Prevention by setting ambitious, measurable goals and then working to attain them. Management, professional staff, and production employees all played a role in the company's success.

SEH America employs 1650 people and manufactures silicon wafers in Vancouver. The company operates with a strong commitment to protecting the environment. They strive for continuous improvement in their environmental performance by using a comprehensive Environmental Management System (EMS). The EMS serves to incorporate environmental considerations into day-to-day operations.

SEH America uses their EMS to develop specific environmental goals and chart success toward those goals. For the 1999/2000 calendar year, the company set EMS goals focused on conserving water and improving solid waste management.

One of these goals was to reduce site water consumption by 10 percent—or 244 gallons per minute. They accomplished this goal in October of 1999, by:

**Conserving:** determining minimum water needs to reduce water flows

**Recycling:** reusing water from the final rinse bath for initial rinses

**Reclaiming:** returning water with trace levels of contaminants to the purification process.

Another goal was to increase the company's recycling savings by 25 percent. SEH America accomplished this goal by tracking all of the solid wastes generated, the amount recycled, and the cost savings associated with managing the materials. The figures were reported to management and employees on a monthly basis, to help motivate reduction efforts and monitor progress toward the goal. The result was that SEH America saved over half a million dollars through their solid waste program and diverted 1,057 tons of material from landfill disposal.

## Annual Dangerous Waste Reports Due March 1, 2001

The Dangerous Waste Annual Report packets for 2000 were mailed in December to all sites that had an active RCRA Site ID Number (ID Number) during the year. If your ID number was active during 2000, you are required to complete the Annual Report, even if you did not generate or manage any dangerous waste during the year. You must at least complete the Verification Form to inform Ecology whether or not you conducted any dangerous waste handling activities in 2000.

Before beginning your 2000 Annual Dangerous Waste Report read the important information included in the packet. See highlights below.

If your site was active and you have not received your Annual Report packet call Ecology at 1-800-874-2022 (within state) or (360) 407-6170.

- ✓ Dangerous Waste Regulation Amendments, Effective June 2000:
  - Ecology added lamps that are dangerous waste to the Universal Waste Rule.
  - Ecology adopted the federal used oil rule, but with specific state differences.
  - Companies that own or lease and operate a transfer facility are now required to obtain an ID Number.
- ✓ The Annual Report Book 2 has been updated for 2000 reporting. When you receive this copy, please save for future use; it's not printed every year!
- ✓ TurboWaste: No changes were made in the TurboWaste Software for reporting year 2000. Version 2.3 remains the current version for completing your 2000 Annual Report.
- ✓ Batteries: Are you confused about how to manage them? Keeping different types of batteries separate is the key to proper management. Find out more in your Annual Report packet.
- ✓ CleanCare Customers—Do Not Double Report: If you were a Clean Care customer who re-manifested wastes from that facility, avoid "double reporting" of unprocessed waste. Be sure to read complete information included in your Annual Report packet.

## EPA's Small Business Innovation Research Program

Through the Small Business Innovation Research (SBIR) Program, the U.S. Environmental Protection Agency (EPA) makes awards to small, high-tech firms to research and develop cutting edge technologies. EPA is interested in advanced technologies in pollution prevention, air and water pollution control, solid and hazardous waste management, environmental monitoring and analytical technologies where the research will serve as a base for technological innovation and commercialization.

Two Seattle businesses received Phase I awards last year. DTEC Systems, L.L.C., and Frontier Geosciences, Inc., applied for and were awarded funds to investigate projects aimed at protecting water quality.

EPA annually solicits proposals in two phases:

**Phase I:** Investigate scientific merit and technical feasibility. Maximum award is \$70,000 for a six month period.

**Phase II:** Complete the research and development required to commercialize the technology or product from Phase I. Maximum award is \$295,000 for a two year period.

The Small Business Innovation Development Act, which established the SBIR Program, was intended to strengthen the role of small businesses in federally funded research and development and develop a stronger national base for technical innovation. The next Phase I solicitation period is March 29 to May 24. For more information, visit [www.epa.gov/ncerqa/sbir](http://www.epa.gov/ncerqa/sbir) or call (800) 490-9194. For information about other funding opportunities, consult the Pollution Prevention Request for Proposal Clearinghouse at <http://www.pprc.org/pprc/rfp/rfp.html>.

*This article was adopted from an article by Deb McKinley published in the Minnesota Technical Assistance Program's SOURCE, Winter 2000. View this publication at [www.mntap.umn.edu](http://www.mntap.umn.edu)*

## Questions and Answers:

**Q** What is the TREE (Toxics Reduction Engineer Efficiency) team?

**A** The TREE team is a group of Department of Ecology engineers that provides free in-depth technical assistance to interested businesses in Washington State. The TREE team assists businesses with improving their process efficiency while reducing wastes in a cost-effective manner. This increase in efficiency has resulted in benefits for both the business and the environment. The team's suggestions are documented in a report and presented to the facility.

**Q** What are TREE's successes?

**A** Past projects have resulted in reducing the use of material resources (such as water, energy, and hazardous materials), reducing the generation of wastes and reducing disposal volumes. In 1999, TREE worked with 3 companies and made suggestions that reduced water use by 22 million gallons per year and reduced hazardous waste generation by 32,000 pounds per year. By using the information supplied by Ecology's TREE team, these companies could save a total of \$94,000 each year.

**Q** What is being said about TREE?

**A** "It's a win-win approach!" - *Industrial Plating, Seattle, WA.*  
"I give the TREE team as high a recommendation as I can." - *Basin Frozen Foods, Warden, WA.*  
"They are helpful and pleasant to work with!" - *Protron Circuits - Redmond, WA.*  
"Thank you for the accomplishments that TREE has made." - *Governor Locke's Office.*

**Q** How do I know if my business is a potential TREE candidate?

**A** The ideal candidates for TREE projects are small to medium-sized, private companies that are willing to work with Ecology to optimize their resource use. Anyone may submit a short project application. Ecology's TREE team welcomes all inquiries and applications!

**Q** How do I apply and/or get more information?

**A** Visit our website at <http://www.ecy.wa.gov/programs/hwtr/TREE/index.html> or contact James DeMay at (360) 407-6338.

## Department of Ecology

Remember, your business is liable for all hazardous wastes generated. If you are uncertain about your responsibilities as a hazardous waste generator, call your nearest Ecology office and ask for a hazardous waste specialist. For information on reducing or recycling hazardous waste, ask for the toxics reduction staff, also at the following numbers:

*Bellevue:* (425) 649-7000

*Lacey:* (360) 407-6300

*Yakima:* (509) 575-2490

*Spokane:* (509) 456-2926

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## Shoptalk

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